

CLAIMS

1. A system for determining anesthetic state of a subject, the system comprising:

5 a brain monitor configured to measure at least one parameter of brain activity of the subject and to provide at least one brain monitor output signal indicative of the measured at least one parameter;

a stimulator configured to apply a non-surgical stimulus perturbation to the subject and to provide at least one stimulus output signal indicative of timing and
10 intensity of non-surgical stimuli applied to the subject;

an analyzer coupled to the brain monitor and the stimulator and configured to receive the at least one brain monitor output signal and the at least one stimulus output signal, to determine a stimulus difference between the non-surgical stimulus intensity in the absence of the perturbation and in the presence of the perturbation, to determine a
15 monitor difference between the a first value of the at least one parameter in the absence of the perturbation and a second value of the at least one parameter in the presence of the perturbation, to make a comparison of the stimulus difference and the monitor difference, and to provide an indication of the comparison; and

a display coupled to the analyzer and configured to receive the indication of the
20 comparison, and in response to receiving the indication of the comparison to provide at least one of an audible sound and a visual image indicative of the indication of the comparison.

2. The system of claim 1 further comprising a housing containing at least the
25 brain monitor and the analyzer.

3. The system of claim 2 wherein the housing further contains at least the display.

4. The system of claim 1 wherein the comparison is a ratio of the stimulus difference and the monitor difference.

5. A monitor for determining anesthetic state of a subject, the monitor being for use with a stimulator for applying a non-surgical perturbation stimulus to a patient and providing indicia of intensity of the applied stimulus, the monitor comprising:

10 a sensor adapted to couple to the patient and to sense at least one bodily parameter that is at least partially indicative of anesthetic state, and to provide a sensor output indicative of the sensed at least one bodily parameter;

an input configured to couple to the stimulator to receive the indicia of timing and intensity of the applied stimulus; and

15 an analyzer coupled to the sensor and the input and configured to process the sensor output and the indicia of intensity of the applied stimulus to determine a comparison between (1) the sensor output without the perturbation and the sensor output when the subject responds to the perturbation and (2) the applied stimulus during a time other than when the perturbation is applied and the applied stimulus during application of the perturbation.

6. The monitor of claim 5 wherein the sensor is configured to sense brain activity.

25 7. The monitor of claim 5 wherein the comparison is a ratio.

8. A method of determining anesthetic state of a patient prior to performing a procedure on the patient, the method comprising:
- sensing at least one bodily parameter of the patient that is at least partially indicative of anesthetic state;
- 5 providing a sensed signal indicative of the sensed at least one bodily parameter;
- applying a stimulus perturbation to the patient, the stimulus perturbation being different from the procedure;
- analyzing the sensed signal from a first time when the patient is reacting to the stimulus perturbation and from a second time other than the when the patient is reacting
- 10 to the stimulus perturbation; and
- analyzing a first intensity of the stimulus perturbation and a second intensity of a stimulus, if any, provided to the patient during the second time.
9. The method of claim 8 wherein analyzing the sensed signal includes
- 15 determining a difference between the sensed signal at the first and second times.
10. The method of claim 9 wherein analyzing the first and second intensities includes determining a difference between the first and second intensities.
- 20 11. The method of claim 10 further comprising comparing the difference between the sensed signal and the difference between the first and second intensities.
12. The method of claim 11 wherein the comparing includes determining a ratio of the differences.
- 25 13. The method of claim 8 wherein the at least one bodily parameter is indicative of brain activity.